UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/562,592	07/05/2006	Hiromu Ueshima	04995/281001	4280

38245 7590 01/07/2011

JEROME D. JACKSON (JACKSON PATENT LAW OFFICE)
211 N. UNION STREET, SUITE 100
ALEXANDRIA, VA 22314

EXAMINER	
HICKS, CHARLES V	

ART UNIT	PAPER NUMBER
2629	

NOTIFICATION DATE	DELIVERY MODE
01/07/2011	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

docketing@japalaof.com

Office Action Summary	Application No.	Applicant(s)	
	10/562,592	UESHIMA ET AL.	
	Examiner	Art Unit	
	CHARLES HICKS	2629	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *09 November 2010*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *33-62* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *33-62* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *05 July 2006* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

This communication is responsive to the Request for Continued Examination filed 11/09/2010. Claims 33-38, 40-41, 43-53 and 61-62 have been amended. Claims 33-62 are currently pending.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 33, 36, 38-46, 51-56, 58-62 are rejected under 35 U.S.C. 102(b) as being anticipated by Manwaring (US 2002/0098897).

In reference to claim 33, Manwaring teaches an information processing apparatus for displaying on a display device an image on which a motion of an operation article which is held and given the motion by an operator is indicated, the operation article defining a reflecting surface (Manwaring, Fig. 14; pg. 3, par. 41; a golf club and golf ball put in motion by the user),

the information processing apparatus comprising: a light sensing unit operable to receive light reflected from the operation article to generate a first signal (Manwaring, Fig. 3 and 5; pg. 2, par. 22 and 24; pg. 2, par. 15, two light sensing cameras receiving

light reflected from the light contrasting reflective points on the golf club and golf ball, and generating a first signal for calculation and analysis, the first signal being the first exposure taken by a camera as in Fig. 9, 102a),

the light sensing unit including a plurality of pixels arranged along a first dimension, and a plurality of pixels arranged along a dimension perpendicular to the first dimension: (Manwaring, pg. 4, par. 64, computer monitor for displaying an image with a plurality of pixels),

a state information computing unit operable to compute state information on the basis of the first signal generated by the light sensing unit (Manwaring, pg. 3, par. 54, processed final pairs; Fig. 9A, first signal is the first exposure at time 100 ms; pg. 5, par. 73),

and generate a first trigger on the basis of the state information (Manwaring, pg. 5, par. 70; Fig. 9A, first trigger is the first exposure, triggering the second and subsequent exposures);

and an image display processing unit operable to display on the display device a first object representing a movement locus of the operation article, the image processing unit operable to display the first object at a time determined by the first trigger (Manwaring, Fig. 12, processed information displayed as determined by the first exposure trigger).

Claim 36 is rejected as being dependent on rejected claim 33 as discussed above and further, Manwaring teaches wherein the state information computing unit

computes positional information as the state information of the reflecting surface responsive to speed information as the state information of the reflecting surface exceeding a predetermined first threshold value (Manwaring, pg. 3, par. 46),

until the speed information becomes less than a predetermined second threshold value (Manwaring, pg. 7, par. 97; pg. 1-2, par. 13-14),

or computes the positional information of the reflecting surface after the speed information of the reflecting surface exceeds the predetermined first threshold value but before the reflecting surface deviates beyond a photographing range of the light sensing unit (Manwaring, pg. 7, par. 97; pg. 1-2, par. 13-14),

the state information computing unit determines, responsive to the positional information of the reflecting surface being obtained for three or more times, appearance of the first object representing the movement locus of the operation article on the basis of the first positional information of the reflecting surface and the last positional information of the reflecting surface, and the state information computing unit generates, responsive to the positional information of the reflecting surface being obtained for three or more times, the first trigger on the basis of the state information (Manwaring, Fig. 12; pg. 3, par. 54, processed final pairs; Fig. 9A, first signal is the first exposure at time 100 ms; pg. 5, par. 73).

Claim 38 is rejected as being dependent on rejected claim 33 as discussed above and further, Manwaring teaches further comprising a correction information acquisition unit operable to acquire correction information for correcting positional

information as the state information of the reflecting surface, and the state information computing unit computes corrected positional information by using the correction information (Manwaring, pg. 6, par. 90).

Claim 39 is rejected as being dependent on rejected claim 33 as discussed above and further, Manwaring teaches wherein the first object includes a plurality of objects (Manwaring, Fig. 22).

Claim 40 is rejected as being dependent on rejected claim 33 as discussed above and further, Manwaring teaches wherein the image display processing unit displays the first object representing the movement locus of the operation article on the display device after a lapse of a predetermined time from a generation of the first trigger (Manwaring, pg. 5, par. 73; pg. 1-2, par. 13-14, processing and image displayed following a dedicated time after the first exposure trigger).

In reference to claim 41, Manwaring teaches an information processing apparatus for displaying an image on a display device on the basis of a result of detecting an operation article, the operation article defining a plurality of reflecting surfaces, which is grasped and given a motion by an operator (Manwaring, Fig. 14; pg. 3, par. 41; a golf club and golf ball put in motion by the user),

the information processing apparatus comprising: a light sensing unit operable to receive light reflected from the operation article to generate a first signal (Manwaring,

Fig. 3, 5; pg. 2, par. 22, 24; pg. 2, par. 15, two light sensing cameras receiving light reflected from the light contrasting reflective points on the gulf club and golf ball, and generating a first signal for calculation and analysis, the first signal being the first exposure taken by a camera as in Fig. 9, 102a);

the light sensing unit including a plurality of pixels arranged along a first dimension, and a plurality of pixels arranged along a dimension perpendicular to the first dimension (Manwaring, pg. 4, par. 64, computer monitor for displaying an image),

a state information computing unit operable to compute state information of the operation article on the basis of the first signal generated by the light sensing unit (Manwaring, pg. 3, par. 54, processed final pairs; Fig. 9A, first signal is the first exposure at time 100ms; pg. 5, par. 73),

and determine which of the plurality of reflecting surfaces is photographed on the basis of the state information and generate a first trigger on the basis of the state information (Manwaring, pg. 3, par. 54, processed final pairs; Fig. 12, processed information displayed as determined by the first exposure trigger);

and an image display processing unit operable to display an image on the display device, the image depending on the determined reflecting surface, said image display processing unit operable to display the image at a time determined by the first trigger (Manwaring, Fig. 12, processed information displayed as determined by the first exposure trigger).

Claim 42 is rejected as being dependent on rejected claim 41 as discussed above and further, Manwaring teaches wherein the state information includes area information, profile information, or ratio information indicative of a profile, about the reflecting surface (Manwaring, Fig. 12-13; pg. 6-7, par. 97).

In reference to claim 43, Manwaring teaches an information processing apparatus for displaying an image on a display device on the basis of a result of detecting an operation article, the operation article defining a plurality of reflecting surfaces, which is grasped and given a motion by an operator (Manwaring, Fig. 14; pg. 3, par. 41, a golf club and golf ball put in motion by the user),

the information processing apparatus comprising: a light sensing unit operable to receive light reflected from the operation article to generate a first signal (Manwaring, Fig. 3, 5; pg. 2, par. 22, 24; pg. 2, par. 15, two light sensing cameras receiving light reflected from the light contrasting reflective points on the gulf club and golf ball, and generating a first signal for calculation and analysis, the first signal being the first exposure taken by a camera as in Fig. 9, 102a);

the light sensing unit including a plurality of pixels arranged along a first dimension, and a plurality of pixels arranged along a dimension perpendicular to the first dimension (Manwaring, pg. 4, par. 64, computer monitor for displaying an image),

a state information computing unit operable to compute state information of the operation article on the basis of the first signal generated by the light sensing unit

(Manwaring, pg. 3, par. 54, processed final pairs; Fig. 9A, first signal is the first exposure at time 100ms; pg. 5, par. 73),

and generate a first trigger on the basis of the state information (Manwaring, pg. 5, par. 70; Fig. 9A, first trigger is the first exposure, triggering the second and subsequent exposures);

and an image display processing unit operable to display an image on the display device in accordance with the state information of the plurality of reflecting surfaces, the image display processing unit operable to display the image at a time determined by the first trigger (Manwaring, Fig. 12, processed information displayed as determined by the first exposure trigger).

In reference to claim 44, Manwaring teaches an information processing apparatus for displaying on a display device an image on which a motion of an operation article is indicated, the operation article defining a reflecting surface, which is held and given the motion by an operator (Manwaring, Fig. 14; pg. 3, par. 41, a golf club and golf ball put in motion by the user),

the information processing apparatus comprising: a light sensing unit operable to receive light reflected from the operation article to generate a first signal (Manwaring, Fig. 3 and 5; pg. 2, par. 22 and 24; pg. 2, par. 15, two light sensing cameras receiving light reflected from the light contrasting reflective points on the golf club and golf ball, and generating a first signal for calculation and analysis, the first signal being the first exposure taken by a camera as in Fig. 9, 102a),

the light sensing unit including a plurality of pixels arranged along a first dimension, and a plurality of pixels arranged along a dimension perpendicular to the first dimension (Manwaring, pg. 4, par. 64, computer monitor for displaying an image);

an area information computing unit operable to compute area information of the operation article on the basis of the first signal generated by the light sensing unit (Manwaring, pg. 3, par. 54, processed final pairs; Fig. 9A, first signal is the first exposure at time 100 ms; pg. 5, par. 73),

and generate a trigger responsive to the area information exceeding a predetermined threshold value (Manwaring, pg. 5, par. 70; Fig. 9A, trigger is the first exposure, triggering the second and subsequent exposures);

and an image display processing unit operable to display a predetermined object on the display device in response to the trigger, the image display processing unit operable to display the predetermined object at a time determined by the trigger (Manwaring, Fig. 12, processed information displayed as determined by the first exposure trigger).

Claim 45 is rejected as being dependent on rejected claim 44 as discussed above and further, Manwaring teaches wherein the image display processing unit moves the predetermined object in response to positional information of the reflecting surface (Manwaring, Fig. 24),

and a color of the predetermined object is transparent or translucent (Manwaring, Fig. 24).

In reference to claim 46, Manwaring teaches an information processing apparatus for displaying on a display device an image on which a motion of an operation article is indicated, the operation article defining a reflecting surface, which is held and given the motion by an operator (Manwaring, Fig. 14; pg. 3, par. 41, a golf club and golf ball put in motion by the user),

said information processing apparatus comprising: an imaging unit operable to receive light reflected from the operation article to generate a first signal (Manwaring, Fig. 3 and 5; pg. 2, par. 22 and 24; pg. 2, par. 15, two light sensing cameras receiving light reflected from the light contrasting reflective points on the golf club and golf ball, and generating a first signal for calculation and analysis, the first signal being the first exposure taken by a camera as in Fig. 9, 102a),

the imaging unit including a plurality of pixels arranged along a first dimension, and a plurality of pixels arranged along a dimension perpendicular to the first dimension (Manwaring, pg. 4, par. 64, computer monitor for displaying an image);

a state information computing unit operable to compute state information of the operation article on the basis of the first signal generated by said imaging unit (Manwaring, pg. 3, par. 54, processed final pairs; Fig. 9A, first signal is the first exposure at time 100 ms; pg. 5, par. 73),

and generate a first trigger on the basis of the state information (Manwaring, pg. 5, par. 70; Fig. 9A, first trigger is the first exposure, triggering the second and subsequent exposures);

and an image display processing unit operable to display a character string on the display device, and wherein said image display processing unit displays a character string differing from the character string on the display device at a time determined by the first trigger (Manwaring, Fig. 12, processed information displayed as determined by the first exposure trigger).

In reference to claim 51, Manwaring teaches an information processing apparatus for displaying on a display device an image on which a motion of an operation article is indicated, the operation article defining a reflecting surface, which is held and given the motion by an operator (Manwaring, Fig. 14; pg. 3, par. 41, a golf club and golf ball put in motion by the user),

the information processing apparatus comprising: a light sensing unit operable to receive light reflected from the operation article to generate a first signal (Manwaring, Fig. 3 and 5; pg. 2, par. 22 and 24; pg. 2, par. 15, two light sensing cameras receiving light reflected from the light contrasting reflective points on the golf club and golf ball, and generating a first signal for calculation and analysis, the first signal being the first exposure taken by a camera as in Fig. 9, 102a),

the light sensing unit including a plurality of pixels arranged along a first dimension, and a plurality of pixels arranged along a dimension perpendicular to the first dimension (Manwaring, pg. 4, par. 64, computer monitor for displaying an image),

a state information computing unit operable to compute station information of the operation article on the basis of the first signal generated by the light sensing unit

(Manwaring, pg. 3, par. 54, processed final pairs; Fig. 9A, first signal is the first exposure at time 100 ms; pg. 5, par. 73),

and generate a first trigger on the basis of the state information (Manwaring, pg. 5, par. 70; Fig. 9A, first trigger is the first exposure, triggering the second and subsequent exposures);

and a process fixing unit operable to fix execution of a predetermined process on the basis of the state information of the reflecting surface at a time determined by the first trigger (Manwaring, Fig. 12, processed information displayed as determined by the first exposure trigger).

In reference to claim 52, Manwaring teaches an information processing apparatus for displaying on a display device an image on which a motion of an operation article is indicated, the operation article defining a reflecting surface, which is held and given the motion by an operator (Manwaring, Fig. 14; pg. 3, par. 41, a golf club and golf ball put in motion by the user),

the information processing apparatus comprising: a light sensing unit operable to receive light reflected from the operation article to generate a first signal (Manwaring, Fig. 3 and 5; pg. 2, par. 22 and 24; pg. 2, par. 15, two light sensing cameras receiving light reflected from the light contrasting reflective points on the golf club and golf ball, and generating a first signal for calculation and analysis, the first signal being the first exposure taken by a camera as in Fig. 9, 102a),

the light sensing unit including a plurality of pixels arranged along a first dimension, and a plurality of pixels arranged along a dimension perpendicular to the first dimension (Manwaring, pg. 4, par. 64, computer monitor for displaying an image),

a state information computing unit operable to compute state information of the operation article on the basis of the first signal generated by the light sensing unit (Manwaring, pg. 3, par. 54, processed final pairs; Fig. 9A, first signal is the first exposure at time 100 ms; pg. 5, par. 73),

and an image display processing unit operable to display a predetermined object on the display device responsive to the state information that is obtained successively meeting a predetermined condition (Manwaring, Fig. 12, processed information displayed as determined by the first exposure trigger).

In reference to claim 53, Manwaring teaches an information processing apparatus for displaying an image on a display device on the basis of a result of detecting an operation article, the operation article defining a reflecting surface, which is grasped and given a motion by an operator (Manwaring, Fig. 14; pg. 3, par. 41, a golf club and golf ball put in motion by the user),

the information processing apparatus comprising: a light sensing unit operable to receive light reflected from the operation article to generate a first signal (Manwaring, Fig. 3 and 5; pg. 2, par. 22 and 24; pg. 2, par. 15, two light sensing cameras receiving light reflected from the light contrasting reflective points on the golf club and golf ball,

and generating a first signal for calculation and analysis, the first signal being the first exposure taken by a camera as in Fig. 9, 102a),

the light sensing unit including a plurality of pixels arranged along a first dimension, and a plurality of pixels arranged along a dimension perpendicular to the first dimension (Manwaring, pg. 4, par. 64, computer monitor for displaying an image),

a state information computing unit operable to compute state information of the operation article on the basis of the first signal generated by the light sensing unit (Manwaring, pg. 3, par. 54, processed final pairs; Fig. 9A, first signal is the first exposure at time 100 ms; pg. 5, par. 73),

and generate a first trigger on the basis of the state information (Manwaring, pg. 5, par. 70; Fig. 9A, first trigger is the first exposure, triggering the second and subsequent exposures);

and an image display processing unit operable to display on the display device a guide which instructs an operation direction and operation timing of the operation article and display an image on the display device in accordance with the state information, at a time determined by the first trigger (Manwaring, Fig. 12-13; pg. 5, par. 73; Fig. 12, processed information displayed as determined by the first exposure trigger).

Claim 54 is rejected as being dependent on rejected claim 33 as discussed above and further, Manwaring teaches wherein the state information includes speed information, moving direction information, moving distance information, velocity vector

information, acceleration information, movement locus information, area information, or positional information (Manwaring, Fig. 12-13, pg. 5, par. 73).

Claim 55 is rejected as being dependent on rejected claim 43 as discussed above and further, Manwaring teaches wherein the state information includes speed information, moving direction information, moving distance information, velocity vector information, acceleration information, movement locus information, area information, number information, or positional information (Manwaring, Fig. 12-13; pg. 5, par. 73).

Claim 56 is rejected as being dependent on rejected claim 46 as discussed above and further, Manwaring teaches wherein the state information includes speed information, moving direction information, moving distance information, velocity vector information, acceleration information, movement locus information, area information, or positional information (Manwaring, Fig. 12-13; pg. 5, par. 73).

Claim 58 is rejected as being dependent on rejected claim 51 as discussed above and further, Manwaring teaches wherein the state information includes speed information, moving direction information, moving distance information, velocity vector information, acceleration information, movement locus information, area information, or positional information (Manwaring, Fig. 12-13; pg. 5, par. 73).

Claim 59 is rejected as being dependent on rejected claim 52 as discussed above and further, Manwaring teaches wherein the state information includes speed information, moving direction information, moving distance information, velocity vector information, acceleration information, movement locus information, area information, or positional information (Manwaring, Fig. 12-13; pg. 5, par. 73).

Claim 60 is rejected as being dependent on rejected claim 53 as discussed above and further, Manwaring teaches wherein the state information includes speed information, moving direction information, moving distance information, velocity vector information, acceleration information, movement locus information, area information, or positional information (Manwaring, Fig. 12-13; pg. 5, par. 73).

Claim 61 is rejected as being dependent on rejected claim 41 as discussed above and further, Manwaring teaches wherein said operation article is provided with a plurality of reflecting surfaces (Manwaring, pg. 1, par. 9).

Claim 62 is rejected as being dependent on rejected claim 43 as discussed above and further, Manwaring teaches wherein said operation article is provided with a plurality of reflecting surfaces (Manwaring, pg. 1, par. 9).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 47 and 57 are rejected under 35 U.S.C. 103(a) as being unpatentable over Manwaring (US 2002/0098897) in view of Pryor (US 7,098,891).

In reference to claim 47, Manwaring teaches an information processing apparatus for displaying on a display device an image on which a motion of an operation article is indicated, the operation article defining a reflecting surface, which is held and given the motion by an operator (Manwaring, Fig. 14; pg. 3, par. 41, a golf club and golf ball put in motion by the user),

the information processing comprising: a light sensing unit operable to receive light reflected from the operation article to generate a first signal (Manwaring, Fig. 3 and 5; pg. 2, par. 22 and 24; pg. 2, par. 15, two light sensing cameras receiving light reflected from the light contrasting reflective points on the golf club and golf ball, and generating a first signal for calculation and analysis, the first signal being the first exposure taken by a camera as in Fig. 9, 102a),

the light sensing unit including a plurality of pixels arranged along a first dimension, and a plurality of pixels arranged along a dimension perpendicular to the first dimension (Manwaring, pg. 4, par. 64, computer monitor for displaying an image);

a state information computing unit operable to compute state information of the operation article on the basis of the first signal generated by the light sensing unit (Manwaring, pg. 3, par. 54, processed final pairs; Fig. 9A, first signal is the first exposure at time 100 ms; pg. 5, par. 73),

and generate a first trigger on the basis of the state information (Manwaring, pg. 5, par. 70; Fig. 9A, first trigger is the first exposure, triggering the second and subsequent exposures);

Manwaring however fails teach an image display processing unit operable to update a background image at a time determined by the first trigger.

Pryor discloses an information processing apparatus, analogous in art with that of Manwaring, such that an image display processing unit is operable to update a background image at a time determined by the first trigger (Pryor, col. 25, ll. 31-37).

At the time the invention was made, it would have been obvious to one having ordinary skill in the art to modify the information processing unit of Manwaring, such that an image display processing unit is operable to update a background image at a time determined by the first trigger, as taught by Pryor.

As one of ordinary skill in the art would appreciate, the suggestion/motivation would have been to display more realistic motion in response to user actions.

Claim 57 is rejected as being dependent on rejected claim 47 as discussed above and further, Manwaring teaches wherein the state information includes speed information, moving direction information, moving distance information, velocity vector information, acceleration information, movement locus information, area information, or positional information (Manwaring, Fig. 12-13; pg. 5, par. 73).

Claims 48-50 are rejected under 35 U.S.C. 103(a) as being unpatentable over Manwaring (US 2002/0098897) in view of Numazaki et al. (US 6,144,366).

In reference to claim 48, Manwaring teaches an information processing apparatus for displaying on a display device an image on which a motion of an operation article is indicated, the operation article defining a reflecting surface, which is held and given the motion by an operator (Manwaring, Fig. 14; pg. 3, par. 41, a golf club and golf ball put in motion by the user),

the information processing apparatus comprising: a light sensing unit operable to receive light reflected from the operation article to generate a first signal (Manwaring, Fig. 3 and 5; pg. 2, par. 22 and 24; pg. 2, par. 15, two light sensing cameras receiving light reflected from the light contrasting reflective points on the golf club and golf ball, and generating a first signal for calculation and analysis, the first signal being the first exposure taken by a camera as in Fig. 9, 102a),

the light sensing unit including a plurality of pixels arranged along a first dimension, and a plurality of pixels arranged along a dimension perpendicular to the first dimension (Manwaring, pg. 4, par. 64, computer monitor for displaying an image),

a positional information computing unit operable to compute positional information of the reflecting surface on the basis of the first signal generated by the light sensing unit (Manwaring, pg. 3, par. 54, processed final pairs; Fig. 9A, first signal is the first exposure at time 100 ms; pg. 5, par. 73).

Manwaring however fails to teach an image display processing unit operable to display a cursor on the display device and move the cursor in accordance with the positional information of the reflecting surface.

Numazaki discloses an apparatus for generating information from an input using reflected light image of a target object, analogous in art with that of Manwaring, wherein an image display processing unit is operable to display a cursor on the display device and move the cursor in accordance with the positional information of the reflecting surface (Numazaki, col. 26, ll. 8-14).

At the time the invention was made it would have been obvious to one of ordinary skill in the art to modify the information processing device of Manwaring such that an image display processing unit is operable to display a cursor on the display device and move the cursor in accordance with the positional information of the reflecting surface, as taught by Numazaki.

As one of ordinary skill in the art would appreciate, the suggestion/motivation for doing so would have been to provide a user with a cursor operable in three-dimensional space (Numazaki, col. 1, ll. 51-56).

Claim 49 is rejected as being dependent on rejected claim 48 as discussed above and further, Manwaring modified by Numazaki teaches wherein, responsive to the cursor being displayed so as to be overlapped on a predetermined object, the image display processing unit displays an image associated with the predetermined object on the display device (Numazaki, Fig. 21-22; col. 27, ll. 19-29).

Claim 50 is rejected as being dependent on rejected claim 48 as discussed above and further, Manwaring modified by Numazaki teaches wherein the image display processing unit display a character selected by the cursor on the display device (Numazaki, Fig. 21-22, col. 28, ll. 33-41).

Claims 34, 35, 37 are rejected under 35 U.S.C. 103(a) as being unpatentable over Manwaring (US 2002/0098897) in view of Purdy (US 6,191,799).

Claim 34 is rejected as being dependent on rejected claim 33 as discussed above and further, Manwaring however fails to teach wherein the first object representing the movement locus comprises a beltlike object, the image display processing unit represents the movement locus of the operation article by displaying the beltlike object on the display so that a width of the beltlike object varies for each prescribed unit which includes a frame, and the width of the beltlike object increases as the frame is updated, and thereafter decreases as the frame is updated.

Purdy discloses a method for altering the appearance of an animated object, analogous in art with that of Manwaring, such that the first object representing the movement locus comprises a beltlike object (Purdy, Fig. 3B; col. 4, ll. 56-col. 5, ll. 15),

said image display processing unit represents the movement locus of the operation article by displaying the beltlike object on the display device so that a width of the beltlike object varies for each prescribed unit which includes a frame, and the width of the beltlike object increases as the frame is updated, and thereafter decreases as the frame is updated (Purdy, Fig. 3B; col. 4, ll. 56-col. 5, ll. 15).

At the time the invention was made it would have been obvious to one having ordinary skill in the art to modify the apparatus of Manwaring such that the first object representing the movement locus comprises a beltlike object, the image display processing unit represents the movement locus of the operation article by displaying the beltlike object on the display device so that a width of the beltlike object varies for each prescribed unit which includes a frame, and the width of the beltlike object increases as

the frame is updated, and thereafter decreases as the frame is updated, as taught by Purdy.

As one of ordinary skill in the art would appreciate, the suggestion/motivation for doing so would have been to take advantage of the dynamic alteration in appearance of animated objects to immediately convey to a user a change in data represented by the object (Purdy, col. 4, ll. 56-col. 5, ll. 15).

Claim 35 is rejected as being dependent on rejected claim 34 as discussed above and further, Manwaring teaches wherein the image display processing unit displays a second object on the display device (Manwaring, Fig. 12-13),

said state information computing unit generates a second trigger responsive to positional relation between the second object and the first object representing the movement locus of the operation article meeting a predetermined condition (Manwaring, Fig. 12-13; pg. 3, par. 54, processed final pairs; Fig. 9A, second trigger is the second exposure at time 895.9 ms; pg. 5, par. 73),

and the image display processing unit displays a predetermined effect on the display device in response to the second trigger (Manwaring, Fig. 12-13; pg. 3, par. 54, processed final pairs; Fig. 9A, second trigger is the second exposure at time 895.9 ms; pg. 5, par. 73).

Claim 37 is rejected as being dependent on rejected claim 33 as discussed above and further, Manwaring however fails to teach wherein the first object

representing the movement locus comprises a beltlike object, the image display processing unit represents the movement locus of the operation article by displaying the beltlike object on the display device so that a width and a length of the beltlike object vary for each prescribed unit which includes a frame, and the beltlike object increases in length as the frame is updated, and responsive to the length becoming a predetermined length, the width of the beltlike object decreases as the frame is updated.

Purdy discloses a method for altering the appearance of an animated object, analogous in art with that of Manwaring, such that the first object representing the movement locus comprises a beltlike object (Purdy, Fig. 3B; col. 4, ll. 56-col. 5, ll. 15),

the image display processing unit represents the movement locus of the operation article by displaying the beltlike object on the display device so that a width and length of the beltlike object vary for each prescribed unit which includes a frame, and the beltlike object increases in length as the frame is updated, and responsive to the length becoming a predetermined length, the width of the beltlike object decreases as the frame is updated (Purdy, col. 4, ll. 56-col. 5, ll. 15; col. 11, ll. 46-65).

At the time the invention was made, it would have been obvious to one having ordinary skill in the art to modify the apparatus of Manwaring such that the first object representing the movement locus comprises a beltlike object, the image display processing unit represents the movement locus of the operation article by displaying the beltlike object on the display device so that a width and a length of the beltlike object vary for each prescribed unit which includes a frame, and the beltlike object increases in length as the frame is updated, and responsive to the length becoming a predetermined

length, the width of the beltlike object decreases as the frame is updated, as taught by Purdy.

As one of ordinary skill in the art would appreciate, the suggestion/motivation for doing so would have been to take advantage of the dynamic alteration in appearance of animated objects to immediately convey to a user a change in data represented by the object (Purdy, col. 4, ll. 56-col. 5, ll. 15).

Response to Arguments

As to claim 36, applicants argue on page 16 of applicant's response that the cited prior art of record fails to teach computing state information of the reflecting surface responsive to speed information exceeding a predetermined first threshold value until the speed information becomes less than a predetermined second threshold, or computes positional information after the speed information exceeds the predetermined first threshold but before deviation beyond a photographing range.

Manwaring teaches computing speed as state information, after exceeding a predetermined first threshold, until the speed information becomes less than a predetermined second threshold (Manwaring, pg. 7, par. 97; pg. 1-2, par. 13-14).

Manwaring teaches an operator inputting first and second thresholds, determining threshold levels on a measurement of light intensity, and appropriate setting of threshold values to determine the sequence and timing of a plurality of exposures, and a bounding area, the photographic area, to be used in determining speed information, until a golf ball object deviates beyond a photographic range

(Manwaring, pg. 7, par. 97; pg. 1-2, par. 13-14). The predetermined thresholds of Manwaring in determining speed information correspond to the predetermined first and second thresholds of the current claim.

Therefore, Manwaring teaches computing state information of the reflecting surface responsive to speed information exceeding a predetermined first threshold value until the speed information becomes less than a predetermined second threshold, or computes positional information after the speed information exceeds the predetermined first threshold but before deviation beyond a photographing range.

Applicant's further arguments with respect to claims 33-62, as amended herein, have been considered but are moot in view of the new interpretation of the cited prior art of record.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to CHARLES HICKS whose telephone number is 571-270-7535. The examiner can normally be reached on Monday-Thursday from 7:30 to 4:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Sumati Lefkowitz, can be reached on 571-272-3638. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for

published applications may be obtained from either Private PAIR or Public PAIR.

Status information for unpublished applications is available through Private PAIR only.

For more information about the PAIR system, see http://portal.uspto.gov/external/portal.

Should you have questions on access to the Private PAIR system, contact the

Electronic Business Center (EBC) at 866-217-9197 (toll-free).

CH

/Alexander S. Beck/
Primary Examiner, Art Unit 2629